

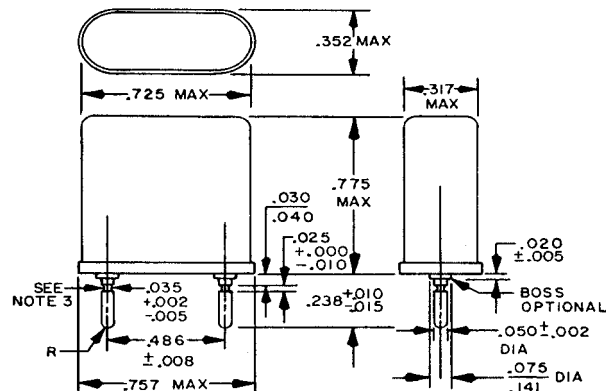
PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR28/U

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-PRF-3098.

Pertinent characteristics: 0.8 MHz to 20 MHz; fundamental: controlled; series resonance.



| Inches | mm | Inches | mm |
|--------|------|--------|-------|
| .002 | .05 | .050 | 1.27 |
| .005 | .13 | .075 | 1.91 |
| .008 | .20 | .141 | 3.58 |
| .010 | .25 | .238 | 6.05 |
| .015 | .38 | .317 | 8.05 |
| .020 | .51 | .352 | 8.94 |
| .025 | .64 | .486 | 12.34 |
| .030 | .76 | .725 | 18.42 |
| .035 | .89 | .757 | 19.23 |
| .040 | 1.02 | .775 | 19.69 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The pin undercut may be omitted.
4. Marking to be in accordance with MIL-PRF-3098.

FIGURE 1. Crystal unit - CR28/U.

MIL-PRF-3098/10G

REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 0.8 MHz to 20 MHz, inclusive.

Capacitance, shunt: 7 pF, maximum.

Frequency tolerance:

Operating temperature range: ± 20 parts per million (ppm).

Room temperature: ± 70 ppm.

Frequency stability: ± 5 ppm.

Equivalent resistance: See table I.

Mode of oscillation: Fundamental.

Reference temperature: $+75^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

Temperature ranges:

Operable: -55°C to $+70^{\circ}\text{C}$, and $+80^{\circ}\text{C}$ to $+90^{\circ}\text{C}$, inclusive

Operating (controlled): $+70^{\circ}\text{C}$ to $+80^{\circ}\text{C}$, inclusive.

Rated drive level: 1.0 mW, maximum.

Resonance: Series.

Shock (specified pulse):

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: Below 2MHz: ± 15 percent
2.0 MHz and above: ± 10 percent

Vibration: Method 201 of MIL-STD-202.

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: Below 2MHz: ± 15 percent
2.0 MHz and above: ± 10 percent

Thermal shock:

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: Below 2MHz: ± 15 percent
2.0 MHz and above: ± 10 percent

Aging:

Frequency change permitted: ± 5 ppm.

TABLE I. Equivalent resistance.

| Frequency range, inclusive | Maximum resistance |
|-------------------------------|-----------------------|
| <u>MHz</u> | <u>Ohms</u> |
| 0.80 to 0.85 | 520 |
| 0.85+ to 0.90 | 480 |
| 0.90+ to 1.00 | 440 |
| 1.00+ to 1.12 | 400 |
| 1.12+ to 1.25 | 380 |
| 1.25+ to 1.37 | 340 |
| 1.37+ to 1.50 | 300 |
| 1.50+ to 1.62 | 270 |
| 1.62+ to 1.75 | 250 |
| 1.75+ to 1.87 | 220 |
| 1.87+ to 2.00 | 180 |
| 2.00+ to 2.12 | 160 |
| 2.12+ to 2.25 | 150 |
| 2.25+ to 2.60 | 120 |
| 2.60+ to 3.00 | 90 |
| 3.00+ to 3.40 | 70 |
| 3.40+ to 3.75 | 52 |
| 3.75+ to 4.00 | 45 |
| 4.00+ to 5.00 | 37 |
| 5.00+ to 7.00 | 25 |
| 7.00+ to 10.00 | 20 |
| 10.00+ to 15.00 | 18 |
| 15.00+ to 20.00 | 15 |

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - CR

Navy - EC

Air Force - 11

DLA - CC

Preparing activity:

Army - CR

Agent:

DLA - CC

Review activities:

Army - AR, MI

Navy - AS, MC, SH

Air Force - 19

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